

EHF – Puncture: Integration of ancient theory & Modern quantum technology

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EHF – Therapy as a New Method of Treatment

Extremely High Frequency (EHF) - Therapy represents a new treatment method based on various biological effects, produced in any living organisms, by a low-intensity electromagnetic radiation (EMR) in the millimeter (MM) spectrum of waveband. Millimeter waves (MMW) reside between infrared radiation and centimeter radio waves and include frequencies from 30 to 300 GHz or wavelengths from 1 to 10 mm.

Three types of electromagnetic radiation are used in practice: coherent, which has a fixed frequency and constant phase, and «noise-like» having a broad spectrum, with randomly varying amplitudes and phases, and its combination. MM EMW used in the medicine has low power, 1 to 10 mW.

It is supposed that general biologic and adaptation mechanisms are involved in the curative effect of EHF- Therapy.

According to one of the hypotheses, the primary target for MM radiation is water the molecule in any living organism. A change in the extent of hydration for the cellular membrane proteins results in their conformational changes, which affects the ion transport and synthesis and accumulation of adenosine tri phosphate acid. The ultimate effect of MMW radiation on the organism is formed with participation of the neuro-humoral system and depends on the particular organ, skin area or a point exposed to radiation.

Another hypothesis suggests that MMW propagate in the human body along the «channels» described in the traditional Oriental medicine (TOM). Any biological object, including human organism, has its own natural or «characteristic» frequencies, which should be chosen and applied for treatment.

Different types of biological effects, observed in MMW application, are the reasons that several major methods of EHF – therapy have been developed to date. It is well established today by theoretical, experimental and clinical data, that exposure point or area, rather than radiation frequency, plays an essential role in the treatments efficiency. High sensitivity of acupoints to MM radiation has been revealed, and this is probably explained by high hydration at these points. Acupoints are efficiently selected in TOM. Based on the patient's complaints and anamnesis of disease, appearance and tongue inspection, a syndrome TOM diagnosis is determined, which allows the selection of treatment points and methods.

Syndrome Approach of Traditional Chinese Medicine

Acupoints represent a complex system formed by the connective tissue with a large number of neural receptors and open neural ends, developed vascular system, various cell elements including biologically active substances, and aggregation of gap junctions (fig. 1). Neural and vascular processes only do not limit the acupoints functioning. All regulator systems of the organism should be involved in realization of EHF-/acupuncture effects. Functional parameters, which have the largest deflection from normal values, will be most intensively changed (normalized) by the EHF- or acupuncture.

¹ This article was published without illustrations; pictures were presented at the Congress

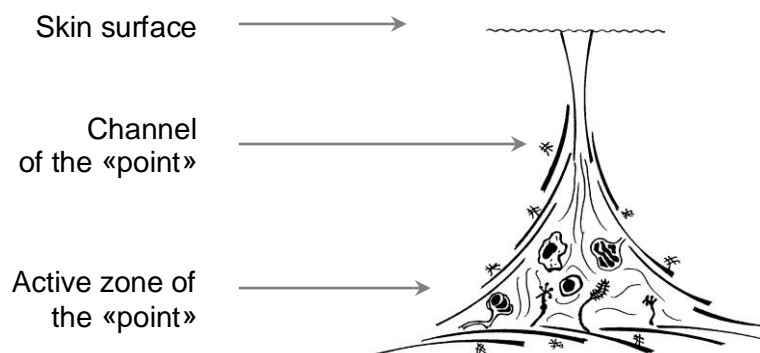


Figure 1. There is a scheme of acupuncture points

Although the latest researches have thrown light on the mechanism of acupuncture effects they regrettably have not given any new recommendations on selection of exposure areas. TOM acupoint theory still remains the most productive source for the choice of acupoints for therapy.

The majority of patients present with the following three groups of symptoms:

1) Acute non-specific symptoms, which reflect the development of a General Adaptation Syndrome. These symptoms have been thoroughly described by the Chinese physician *Zhang Zhongjing* in the «*Treatise on Febrile Diseases Caused by Cold*». We recommend using the «Six Channels» theory to treat peptic ulcer, common cold, abstinence syndromes, and other acute diseases and states. In spite of differences in modern nosology of diagnoses, the same acupoints should be selected if «level» or «phase» is identical (fig. 2).

The treatment is either daily, or every other day. Fewer treatment sessions should be given when the organ is deeply affected and more frequently when the pathology is superficial.

External factors or Meteofactors:
Wind, Heat, Cold, Dampness,
and Dryness



Figure 2. Aggravation of diseases from “outside to the inside”

2) Specific symptoms, which reflect the characteristics of a particular disease, or localization of pathologic process. These symptoms are described by means of affection syndromes of «Channels and Collaterals», «Zang and Fu Organs» (fig. 3) and are used in treatment of peptic ulcer, gastric polyps, liver and kidney cysts, bronchial asthma, etc. Diagnostics may be different, depending on the following disease characteristics:

- Localization of disease: Regular channel, Tendino-muscular-, *Luo*- or Divergent vessels; *Zang* or *Fu* Organ; Wood, Fire, Earth, Metal, or Water Element, etc.;
- Type of Disease: Heat or Cold;
- Condition of the Defensive Qi: Excess or Deficiency;
- Etiology of disease: Exogenous or Emotional factors, Improper Diet, Stress, etc.;
- Pathogenesis of disease: transformation of disease either from Exterior to Interior, or from Interior to Exterior, or between the Elements.

Treatment rate is 2 or 3 sessions a week, with utilization of the major functional acupoints.

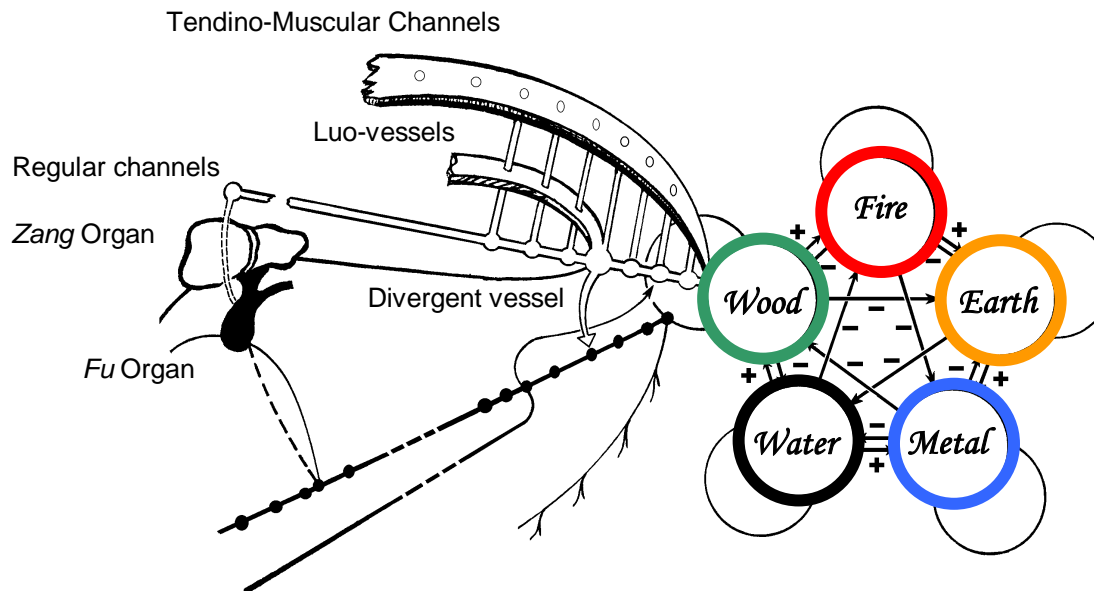


Figure 3. There are Theories of Channels, Collaterals, Organs and Five Elements

3) Chronic non-specific symptoms are related to the constitutional characteristics of the patient. The third group of symptoms is specified on basis of Deficiency of *Yin* or *Yang*, Four Seas, Blood & Energy syndromes, as well as Deficiency of *Zang* Organs and Five Elements theory. These syndromes are used as a rule in treatment of chronic diseases, such as a coronary heart disease, angina pectoris, bronchial asthma, high blood pressure, enuresis and so on. The same syndromes may be used in preventive therapy; prior to the aggravation of chronic disease is possible.



Figure 4. Constitutional Syndromes: Deficiency of Zang Organs, Deficiency of Yang & Deficiency of Yin.

Treatment usually should be undertaken 1 - 3 times a week. *Shu-Mu* therapy methods are recommended (*Mu* are the so called «alarm» points located on the front surface of abdominal wall, or thorax, while the back *Shu* points dispose along the Bladder Channel close to the spine).

Symptoms of an Extra- (or Curious) Vessels affect may be attributed to any of the groups of syndromes described earlier. Thus, for example, *Yang Jiao Mai* syndrome includes *Tai Yang*, *Shao Yang* and *Yang Ming* symptoms (fig. 5), while *Yin Wei* unites *Tai Yin*, *Shao Yin* and *Jue Yin* levels. The symptoms may be thus used in combination with the «Six Channels» theory, in the treatment of diseases caused by exogenous factors. Besides each Extra- Channel have its constitutional characteristics and pathologies of interior origin.

The body's right or left side may be selected according to the TOM theory, which does not allow dispersion or sedation of the «Yin side at the Yin time and Yang side at the Yang time». So for a dispersion or sedative effect one should treat the right side of the patient's body in spring and summer, but the left side in autumn and winter.



Figure 5. Yang Jiao Mai Extra Channel unites 3 Yang levels: Tai Yang (B – SI), Shao Yang (Vb – TH) and Yang Ming (St – LI).

Though simultaneous exposure of several acupoints is possible, sequential application is preferable, first to reinforcing points and then to sedative points, except in specially indicated cases. This is explained by the fact that MMW stimulate sensor reactions, which allows the individualization of the time of each acupoint exposure.

Modality of EHF – Puncture

Millimeter-wave radiation may be used in treatment of the Excess and Deficiency type of diseases, as well as those characterized by Heat and Cold syndromes. Modality of the effect is determined by the acupoint exposure time.

1) Reinforcing or tonification effect of EHF-Puncture. To achieve reinforcing by means of EHF-puncture, the exposure time should not exceed 2 or 3 minutes. One has to wait in this case for the appearance of initial specific reactions (usually pleasant) and their increase to the maximum intensity. Usually the acupoints that require stimulation respond quickly.

2) Reducing or sedation effect of EHF-Puncture. To obtain a reducing effect, the exposure time may be 15-20-30 minutes or even longer. One has to wait for the specific (usually uncomfortable) sensations to appear, grow in intensity, stabilize and then disappear.

3) The exposure length, which should not exceed 0,5 to 1 min, may obtain the warming effect of EHF-Puncture, to treat Cold syndromes. Some patients note the warm sensation in the exposure area or other parts of the body. Pulse rate in this case is increased from 2 or 3 beats per breath [«Cold» syndrome] up to 5 [normal pulse to breath ratio]. Combination of MMW acupuncture and moxibustion is possible for treatment of Cold syndrome.

4) Clearing or Cooling effect of EHF-Puncture can be achieved by a 30 min or more EHF-exposure. In this case patient may have a feeling of «cooling» at various place of the body. Pulse slows down from 6-8 beats per breath [«Heat»] to 5 beats [normal]. To enhance the effect, EHF-exposure may be combined with needling of proper acupoints.

Although the specific sensations, which originate in the EHF-Puncture process, allow the determination of the individual exposure time quite accurately, but it should be kept in mind that patients having white and weakly tenable skin, require less intensive radiation than those having dark and well-tenable skin. In other words, the EHF-therapy must be less intensive for patients who have *Yin* Deficiency, than for those with *Yang*.

Specific Sensation or «Arrival of Qi» During EHF – Puncture

Phenomenon of «Arrival of Qi» (*Teh Chi*) was described from the very beginning of acupuncture. In ancient times in the classic Chinese books it was written, «acupuncture therapy does not take effect until arrival of Qi».

Modern investigations confirm that if the needle is inserted to a certain depth, the patient may feel soreness, numbness or distension at the place of needling. In this case it is possible to observe the changes of the biophysical parameters of the skin around the point. Special needle manipulation can stimulate different sensations, moving along legs, arms or trunk. They are named the phenomenon of «propagated sensations along the channels» (PSC) and can be detected by changes in the low electrical resistance, skin potentials, sound signals, temperature, spontaneous visible light, etc. Changes in functional activity of certain organs can be observed when PSC arrives in their region.

EHF-Puncture can be applied both in case of Deficiency and Excess. In case of patient with the syndrome of Deficiency, «Arrival of Qi» appears rather quickly. It correlates with the «place of Deficiency» and is usually comfortable. In case of Excess at the beginning of the procedure the patient may have aggravation of his initial presented symptoms (because of the reinforcing effect during the beginning of the EHF-influence), which later disappear.

During EHF-Puncture sensations at the place of influence observed in cases, when there is mainly local disorders. Usually in the beginning of the treatment different sensations moving along the patient's legs, arms, trunk or just along the certain channel (warm, cool, waves, creeps, etc.) appear. After that the patient experiences various sensations, which reflect the elimination of his initially presented disorders. For example, a patient with the syndrome of *Spleen Deficiency* has symptoms of digestive system and «heaviness in the abdomen». After 1-2 minutes exposure on the point Sp₂ (*Da Du*) he begins to feel «increasing lightness in the abdomen or in the entire body», «rocking», or even «floating above the couch». Irradiation of the point B₁₃ (*Fei Shu*) during 1.5 - 2.0 minutes for the *Deficiency of Lung* makes breathing deeper and more prolonged. Some patients experience various «visual sensory reactions» in spite of closed eyes. These sensations could include «seeing changing colours», «appearance of light» or even more complex visual images resembling dreams.

To conclude this theme we would like to point at the main peculiarities of the phenomenon of «Arrival of Qi» during EHF-puncture:

- 1) EHF-Puncture can stimulate different kinds of «Arrival of Qi» phenomenon without needle manipulation.
- 2) EHF-Puncture can stimulate different kinds of «Arrival of Qi» phenomenon of various structures during influence upon one and the same acupoint.
- 3) During EHF-Puncture sensory response are realized not at the place of MM EMR exposure but at the place of «Qi» disorders.
- 4) During EHF-Puncture only one side of the body should be influenced but sensory response is observed at both sides.
- 5) Sensory reactions, appearing during EHF-Puncture, help the doctor to quickly study traditional acupuncture theory.

Combination of EHF – Puncture with other Treatment Methods

The best treatment effect is obtained when different TOM methods are applied in accordance with indications. Any modern «western» therapeutic methods, when applied without their prior evaluation, from positions of TOM, may result in their *antagonistic* interaction and reduce the carried therapy efficiency. Combination of EHF-therapy with some of the present-day medicines often gives *overdose* effects, thus requiring that smaller doses would be used. Approximate syndrome characteristics of the current medicines should be obtained from analysis of their clinical side effects.

Indications for EHF – Puncture

Diseases of digestive organs, including:

- * Peptic ulcers,
- * Gastric polyps,
- * Cholecystitis,
- * Gastritis, duodenitis, colitis, hemorrhoid;

⇒ *Diseases of respiratory organs, including:*

- * Bronchial asthma,
- * Rhinitis, sinusitis, chronic bronchitis;

⇒ *Diseases of cardio-vascular organs, including:*

- * Some forms of coronary heart disease,
- * Hypertension and neurocirculation disorders;

⇒ *Neurological diseases, including:*

- * Neuralgia, neuritis, paresis,
- * Initial stage of multiple sclerosis,
- * Pain and other syndromes caused by vertebral disorders;

⇒ *Orthopedic diseases:*

- * Arthritis, arthralgia and arthrosis, including Perthes disease;

And also:

In oncology: hemo-protective and immuno-reinforcing effects;

In narcology: EHF - detoxification, drug addiction;

In pediatrics: infantile cerebral palsy;

In gynecology: sterility, adnexitis, fibroma uteri;

In dermatology: neurodermatitis, psoriasis, eczema, alopecia;

In sexopathology: frigidity, impotence, prostate disease etc.

Contraindications for use of EHF – Puncture

No contraindications have so far been revealed for the application of EHF-therapy, except probably the *low* skill of medical personnel. However certain TOM syndromes require that medicinal therapy would be used first, followed by acupuncture, moxibustion of EHF-therapy.

Side Effects of EHF – Puncture

One may say that the low-power MM radiation does not give rise to any complications. Still, non-adequate use of acupoints due to incorrect TOM diagnosis may either aggravate the existing or create new symptoms.

The Most Important Special Properties of the EHF – Puncture

In spite of the fact, that EHF-Puncture proclaims the same principles as traditional Acupuncture and Moxibustion, we would like to point on the most important properties of this new version of the needles-free influence on acupoints.

1. EHF-Puncture is non-invasive: MM EMR is transmitted to selected acupoints by means of a special dielectric wave-guide and, therefore, there is no problem with sterilization of instruments or danger of bacteria or viruses transmission from one patient to another.

2. EHF-Puncture is painless: this peculiarity is very important during treatment of patients with a high sensitivity to pain.

3. EHF-Puncture is universal: MM EMR can be used to treat «Heat» or «Cold», «Deficiency» or «Excess» syndromes; the type of response depends on the initial condition of the patient and the exposure time depends on responses of the patient. For a reinforcing effect the duration of exposure should not exceed 2–5 minutes and one should wait for the first sensory reactions (usually comfortable) to appear and increase, for reducing effect duration of exposure may be 10-30 minutes and sensory reactions (usually uncomfortable) appear, increase, become stable and disappear slowly.

4. EHF-Puncture permits one and the same acupoints to be «reinforced» or «dispersed» several times during the same treatment. Each time sensory reactions occur and decrease in intensity from one influence to another.

5. EHF-Puncture can stimulate different kinds of «*Arrival of Qi phenomenon*» without needle manipulation. Sensory reactions may even be observed in paralyzed extremities of patients with injury to the vertebral column.

6. The most important peculiarity of MM waves is their possibility to stimulate specific sensory reactions (phenomenon **De Qi**) not at the place of influence but at the place of **Qi**-disorders directly. So, it can be applied for influence on the corporal traditional acupoints as well as points of different Microsystems: Ear, Palm, Sole, Nose, Pulse, etc.

Thus, EHF-puncture, based on the syndrome approach of traditional Chinese medicine, represents a new and efficient method for treatment of various diseases, including those whose etiology and pathogenesis are unknown, while nosologic diagnosis is difficult to determine and treatment methods are undeveloped.